UNITED STATES PATENT AND TRADEMARK OFFICE

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EXAMINER
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ART UNIT	PAPER NUMBER
2625	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>12 March 2010</u>.
2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>8-14</u> is/are pending in the application.
   4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>8-14</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a)☐ All   b)☐ Some * c)☐ None of:
   1.☐ Certified copies of the priority documents have been received.
   2.☐ Certified copies of the priority documents have been received in Application No. _____.
   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08)
      Paper No(s)/Mail Date _____.
4)☐ Interview Summary (PTO-413)
      Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

1.   Claims 8-14 are currently pending in this application.

2.   Claim 8 has been amended [3/12/10].

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4.   **Claims 8, 10 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated**

by Haraguchi et al. (US 6,002,498).

5.   In regards to claim 8, Haraguchi teaches a method for color correction in printing

machines **(Figs. 5 and 6)**, comprising: (a) executing separately one after the other for

individual process colors involved in an autotype combination printing **(Fig. 7, the C, M**

and Y images (color patches) are separate from one another, and are shown

listed one after the other with Y, then M and then C being printed; *see* **Col. 11,**

Lines 1-47); changing only a color supply of a single process color **(Fig. 7, the C, M**

and Y color patches (represented by Ar1-Ar15, Ag1-Ag14 and Ab1-Ab15

respectively) which are changed separately) measuring an effect of the change in

the color supply of this one process color on color data of a color spot **(Fig. 5, Step**

S02, measuring analytical density by densitometer; Col. 11, Line 58 to Col. 12,

Line 11, spectral density of color patches are measured for each of the C, M and Y

color patches to see how the changes in density affect the printed color patch);

storing at least one measurement value representing the effect of the change in the

color supply on the color data **(Col. 12, Lines 12-31, the analytical density**

measurement values (Ar1-Ar15, Ag1-Ag14 and Ab1-Ab15), which are stored,

represent the changes in color supply to the color patches and are inputted into

the calculation-use image processing apparatus 23 for use with subsequent

processing); (b) balancing all of the measurement values measured and stored in step

(a) with each other so that for further color correction, a few or all of the process colors

involved in the printing can be adjusted simultaneously **(Col. 12, Lines 18-67, the**

analytical density values are used to form a lookup table that shows the

relationship between the analytical densities and observed spectral densities, as

can be seen in Fig. 8, which allows all of the primary colors (C, M and Y) to be

adjusted together - specifically see the Y+M+C mixed-dye image (Ni) of Fig. 8).

6.   In regards to claim 10, Haraguchi teaches control waits in step a) until a

balanced state has been reached after a color supply of the corresponding color to be

printed has been changed **(Col. 10, Lines 27-60, multiple regression analysis is**

used to obtain the conversion function of Fig. 5 and therefore a balanced state

will be obtained, further a balanced state can be interpreted simply to mean the

lookup table forming operations for mapping the analytical densities to observed

spectral densities).

7.   In regards to claim 12, Haraguchi teaches in step (a), for each process color to

be printed, the effect of the isolated change in a color supply of each process color on

the chromaticity position of the color spot to be measured, is measured separately one

after the other in time **(Fig. 5, Step S02, measuring analytical density by**

densitometer; Col. 11, Line 58 to Col. 12, Line 11, spectral density of color

patches are measured for each of the C, M and Y color patches to see how the

changes in density affect the printed color patch; further, since the color patches

exist on the medium in descending order, each color supply will be measured one

after another in time (Y->M->C or C->M->Y)).

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

9.   **Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over**

Haraguchi et al. (US 6,002,498), as applied to claim 8, in view of Van de Capelle et

al. (US. 2004/0136015 A1).

10.   In regards to claim 9, Haraguchi teaches during the printing at least one color
spot is measured **(Figs. 5, Step S02, measuring analytical density by densitometer
which can be seen as color patches in Fig. 7)**.

Haraguchi does not specifically teach wherein for this measurement at least one
actual chromaticity position is determined, and that the actual chromaticity position or
each actual chromaticity position is compared with a corresponding desired chromaticity
position, wherein the color correction is performed when the actual chromaticity position
deviates from the corresponding desired chromaticity position.

In analogous art, Van de Capelle (hereafter VDC) teaches wherein for this
measurement at least one actual chromaticity position is determined **(Fig. 4, Step 68,
determine CIE L*a*b* values of measured printed patches)**, and that the actual
chromaticity position or each actual chromaticity position is compared with a
corresponding desired chromaticity position **(Fig. 4, Step 70, determine differences
between desired and measured CIE L*a*b* values)**, wherein the color correction is
performed when the actual chromaticity position deviates from the corresponding
desired chromaticity position **(Fig. 4, Step 78, color correction only is performed if
the initial determination of "close to desired output" is a NO in the first run of the
method)**.

It would have been obvious to one of ordinary skill in the art, at the time of the
invention, to modify Haraguchi by performing color correction of output colors when a
measured color value deviates from a desired color value, as taught by VDC, in order to

enhance image quality by increasing the quality of output color balance through

utilization of control calibration **(VDC: [0001])**.

11.   Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Haraguchi et al. (US 6,002,498), as applied to claim 8, in view of Fujimori (US

6,181,892 B1).

12.   In regards to claim 11, Haraguchi teaches a method according to claim 8 **(see**

the rejection to claim 8 above) and determining the measurement values of a

chromaticity position or each chromaticity position in step a) **(Col. 20, Lines 49-67,**

chromaticity is measured when the RGB CCD measures the spectral density of

the CMY color patches).

However, Haraguchi does not specifically teach at least one value is measured

after a certain time period or at certain time intervals and control locks the changing

balanced state through extrapolation.

On the other hand, Fujimori teaches at least one value is measured after a

certain time period or at certain time intervals and control locks the changing balanced

state through extrapolation **(Figs. 2A-2B, 4)**.

It would have been obvious to one of ordinary skill in the art, at the time of the

invention, to modify Haraguchi by incorporating the time shifted measurement method

of Fujimori into the color correction method of Haraguchi to yield the predictable result

of increasing the long term accuracy of the color measurements due to a more stable

state being reached between measurement times.

13.   Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Haraguchi et al. (US 6,002,498), as applied to claim 12, in view of Van de Capelle

et al. (US. 2004/0136015 A1) and Dolezalek et al. (US 4,901,254).

14.   In regards to claim 13, VDC teaches that it is determined how the corresponding

chromaticity position shifts when changing the color supply of each process color **(VDC:**

Fig. 4, Steps 68-78, by measuring the adjusted patches each time they print and

comparing them to the desired output, color shift can be observed, specifically

whether the color is closer or farther from the desired color between various

iterations of the correction process).

It would have been obvious to one of ordinary skill in the art, at the time of the

invention, to modify Haraguchi by performing color correction of output colors when a

measured color value deviates from a desired color value, as taught by VDC, in order to

enhance image quality by increasing the quality of output color balance through

utilization of control calibration **(VDC: [0001])**.

It is noted however, that Haraguchi, as modified by VDC, does not specifically

teach the magnitude and direction of a color vector are determined from the

chromaticity positions before the color change and after the color change.

In analogous art, Dolezalek et al. (hereafter Dolezalek) teaches the magnitude

and direction of a color vector are determined from the chromaticity positions before the

color change and after the color change **(Fig. 8, the points A'-F' are measured which**

compare the difference between the measured value and the theoretical value,

once corrected the color vectors will coincide with the theoretical value for the

changed color point).

It would have been obvious to one of ordinary skill in the art, at the time of the

invention, to modify Haraguchi, as modified by VDC, by determining the magnitude and

direction of color vectors, as taught by Dolezalek, in order to reduce the time it takes to

influence the color appearance of an image by using vector operations **(Dolezalek:**

Abstract).

15.   Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Haraguchi et al. (US 6,002,498), as applied to claim 8, in view of Dolezalek et al.

(US 4,901,254).

16.   In regards to claim 14, Haraguchi teaches the determined and stored

measurement values according to step (b) **(see the rejection to claim 8 above)**.

It is noted however, that Haraguchi does not specifically teach that measurement

values are balanced through vector operations.

In analogous art, Dolezalek teaches that measurement values are balanced

through vector operations **(Figs. 3-9; Abstract; Col. 7, Line 42 to Col. 8, Line 55,**

**measurements are taken of produced colors in a printing process and are
modeled as vectors showing the difference between the actual and intended
results leading to using scaling factors on the produced colors; Col. 11, Lines 13-
20)**.

It would have been obvious to one of ordinary skill in the art, at the time of the
invention, to modify Haraguchi by balancing measurement values through vector
operations, as taught by Dolezalek, in order to reduce the time it takes to influence the
color appearance of an image **(Dolezalek: Abstract)**.

Response to Arguments

17.   Applicant's arguments with respect to claims 8-14 have been considered but are
moot in view of the new ground(s) of rejection.

Conclusion

18.   Applicant's amendment necessitated the new ground(s) of rejection presented in
this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP
§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37
CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE
MONTHS from the mailing date of this action. In the event a first reply is filed within
TWO MONTHS of the mailing date of this final action and the advisory action is not
mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAVIER J. RAMOS whose telephone number is (571) 270-3947. The examiner can normally be reached on Monday to Thursday - 9 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark K. Zimmerman can be reached on (571) 272-7653. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Javier J Ramos/
Examiner, Art Unit 2625

/Benny Q Tieu/
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